Level Monitoring

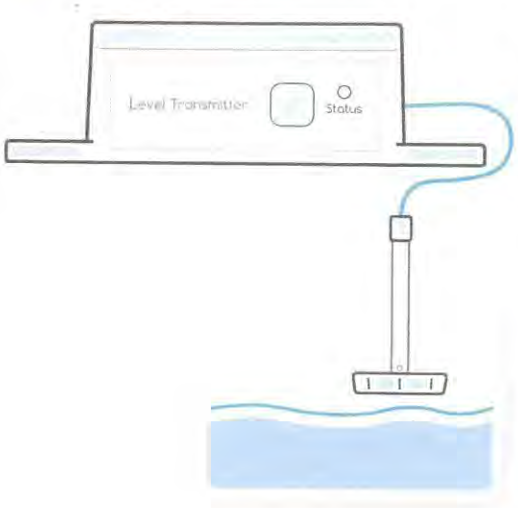
Let's get setup!

Level Monitoring Installation Instruction

Device Installation

1 Start with the WiFi connection instructions that are provided in a separate instruction booklet. It is recommended to get your device connected and working before installing the device at your tank.

2 Let's get the device installed on or near your tank. You need to make sure that there is a way to run the 4mm tubing into the tank. Every installation is unique, so be creative to make this work in your situation.



Find the best location to place the transmitter device. It should be placed where it can't get submersed. Usually on top of the lid or on the side of the riser works well. Also avoid a place where you will need to expose extensive lengths of tubing to sunlight.

Route the 4mm tubing into your tank by means of a drilled hole or other available holes. **Avoid kinks** or ways that the tubing could get **punctured** and **leave the tubing connected to**

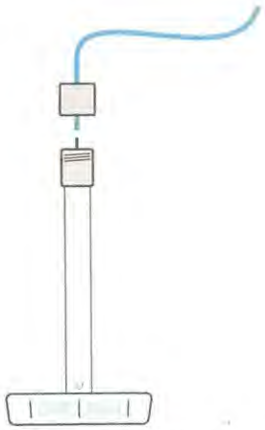
WARNING - You must not install the pressure chamber with the tubing disconnected from the device and the pressure chamber in the water. This will create very improper readings. You want NO water in the

TIP - The device is fully weather resistant and warrantied as such but it is not water proof so you must take precautions to prevent any possible submersion scenarios.

Optionally fasten the device with screws using the enclosure flange holes.

Now, measure the depth of the tank and subtract the length of the pressure chamber. Measure and cut the tubing to that measured length. This is done so that the pressure chamber can't be tipped over in your tank because the tubing has very little slack.

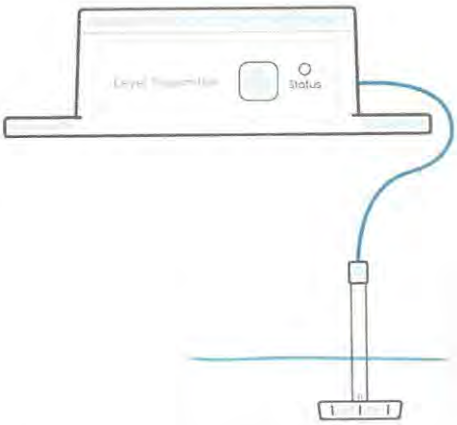
Un-thread the clamping cap from the top of the pressure chamber and route the tubing through the top of the cap. Then press the tubing onto the pressure chamber barb so that the tubing is seated all the way onto the barb. Thread the clamping cap back on snuggly but don't over tighten. This cap clamps the tubing onto the barb so that it is air tight.



INFO - There is a red sealant on the black barb of the pressure chamber, put there to ensure a good tubing seal. Do not remove the red sealant.

TIP - If necessary, apply a slight amount of heat with a lighter or heat gun to the end of the tubing to help with applying the tubing to the pressure chamber barb.

Now, you can lower the pressure chamber into the tank and allow it to sink to the bottom. In cold weather, this might take a little while. Feel free to add some weight to it but generally it is designed to make it to the bottom of your tank.

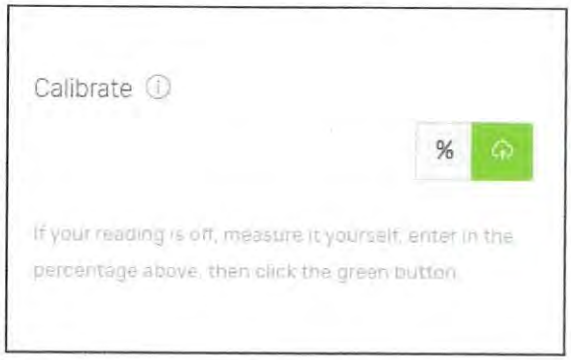


INFO - It is important that the pressure chamber is allowed to stay upright at all times. This is why cutting the tubing to the right length is important.

3 Let's complete the setup online. This step calibrates the reading to make sure it is correct and allows the online system to know some details about the tank we are monitoring.

Log back into your account at www.ptdevices.com or in the app. Click on the ellipsis button at the top right of the level graphic. Click on the "Settings" tab with the gear icon. Enter in the full depth of the tank as a decimal number. Ie - 6' 6" would be entered in as 6.5. You may fill out any of the other optional details and then click on "Save Settings".

Finally, we can calibrate the level. This step puts the reading at exactly to what you measured it as.



Update the reading online by pressing the button on your device first and then refreshing your browser/app. Measure the amount of liquid in the tank with a measuring tape. Divide that measurement by the full inside height of the tank.
Ie: 72" of water / 144" tank height = 0.5.
Multiply the above result by 100 to get the current percentage.
*Ie: 0.5 * 100 = 50%.*
Enter the result from step 3 into the calibration input online. Finally, press the button on the device to update the reading. Verify that the new measurement online is still correct.

INFO - You can only calibrate when the level reading is greater than 20%. This is for accuracy purposes.

4 Installation complete!

Now you can play with some of the settings online or in your app. Add sms alerts, check out the history graph, share with your delivery provider and so much more. Also, consider the premium account which gives you more features yet! Such as volume left, longer history and more!

With your free account, you can:
- view device history
- setup sms and email alerts
- share with your delivery company
- and more...

We offer a premium level account where you can upgrade to add even more features to your account:
- two years of device history
- more history UI controls
- download history
- unlimited alert setpoints
- public sharing and web embedding
- send alerts to other recipients
- and more...

Troubleshooting

INFO - There are more troubleshooting articles online at support.paremtech.com

The level is not reading accurately

If this is the case during the first installation, be sure to check that you've calibrated properly. If this is something that has happened over time, be sure to check all the tubing connections as they must be absolutely air tight. Also try removing the pressure chamber from the tank, allow it to drain and replace it. While you have the tubing out, inspect it to see if there is liquid in the small tubing. That liquid must be removed completely and the connections resealed well. There is more assistance at support.paremtech.com with this.

Maintenance

We recommend that once a season you remove the pressure chamber from the liquid volume, let it drain, then replace it into the liquid again. This resets the air pocket and will keep the reading as accurate as possible. Re-calibrate if necessary. The PTDevices system will send you friendly reminders to do this.

Applications

Below are a few application ideas for this device. It can be used for a septic application, however please contact us to see what is required for that application.

Cistern, dug well, drilled well, sump, chemical tanks, oil tanks, diesel tanks, fertilizer tanks, feeding troughs, septic tanks, rainwater harvesting, and more.

Specifications

Dimensions

- Pressure Chamber - 250mm height, 91mm base diameter, 26mm base height, 22mm tube OD
- 5/32" OD Ether based polyurethane tubing

Wetted Materials

- The "Pressure Chamber" and the tubing consist of the following materials:
- Ether based polyurethane tubing
- PVC (pipe and fittings)
- HDPE (base)
- Portland Cement (inside base enclosure)

Technical

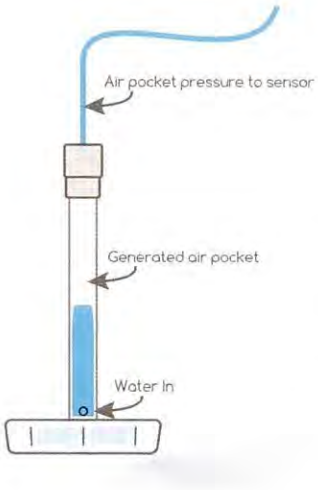
- 0ft to 18ft depth reading range
- -40°C to 100°C environment temperature range.
- Default pressure sensor range is 0 to 100kPa. 0 to 10kPa can be requested for more accuracy on shallow depths.
- Default reading resolution is approximately 8mm of liquidheight. The 0 to 10kPa option provides approximately a resolution of 1mm of liquid height.

Package Contents (Long Range Wireless)

- PTLevel receiver
- PTLevel transmitter
- Four AA batteries
- Weighted pressure chamber
- 13' of pressure tubing
- Instruction manual

Package Contents (Wired WiFi)

- PTLevel WiFi transmitter
- Power adapter
- Pressure chamber
- 13' of pressure tubing
- Instruction manual



Device Function

The PTLevel works by measuring the pressure of an air pocket created and held at the bottom of your tank in the pressure chamber. The pressure variance relates to the height / weight of the liquid. This reading is then transmitted to online servers where a few algorithms are used to translate that data into a usable reading along with many other features.

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www.paremtech.com
www.ptdevices.com

FCC Regulatory Compliance

Warning: changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
-- Reorient or relocate the receiving antenna.
-- Increase the separation between the equipment and receiver.
-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

ISED Regulatory Compliance

This device contains licence-exempt transmitters that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s).
Operation is subject to the following two conditions:
1.This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :
1.L'appareil ne doit pas produire de brouillage;
2.L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

Cet équipement est conforme aux limites d'exposition aux radiations IC CNR-102 établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre le radiateur et votre corps.

Long Range Wireless

Let's get connected!

WiFi Connection Instructions

Congratulations on your purchase!

We strive to supply you with the best North American made product possible! If you have troubles or concerns, please don't hesitate to look on our support system and contact us about anything you need. There is also a 30 day full refund guarantee if you aren't satisfied with the device as well as a 2 year full warranty for your peace of mind.

Support	Warranty	Guarantee
support.paremtech.com	Full 2 year warranty	30 days full refund guarantee

Product Liability Disclaimer

ParemTech offers its products with the terms, conditions and notices as follows. The following terms and conditions apply to all sales and uses. Please review carefully. These terms and conditions include limited warranties and disclaimers of liabilities. Keeping, using or allowing use of ParemTech's products indicates your agreement to these terms. If you do not wish to agree to these terms, you have 30 days from the date of purchase to return the unused product.

Terms of use
This product is offered to you conditional upon your acceptance without modification of the terms, conditions, and notices contained herein.
Exclusive Obligation
This product has been designed for a variety of uses, but was neither designed nor manufactured as a product to be used with flammable or combustible materials. This product may not be used for unlawful purposes and that use is expressly prohibited under the terms and conditions of its use.
Use limitation
You may not modify, copy, distribute, transmit, display, perform, reproduce, publish, license, create derivative works from, transfer, or sell, any information, software, products or services obtained, from ParemTech's website or its products unless given express permission.
Limited Replacement Warranty
This product is warranted against any manufactured defect for a period of two years from date of purchase.
High Risk Activity
Products sold by ParemTech include devices designed to monitor liquid levels. Risks include, but are not limited to, flooding or running dry and the costs associated with these. By using ParemTech's products you are participating at your own risk and ParemTech will not be held responsible for losses associated with these risks or any other risk.
Assumption of Risk
By buying, using, or allowing the use of ParemTech's products, YOU EXPRESSLY AND VOLUNTARILY ASSUME ALL RISK WHETHER OR NOT CAUSED BY THE NEGLIGENCE OR OTHER FAULT OF ParemTech including but not limited to equipment malfunction from whatever cause, or any other fault of ParemTech. Additionally, you agree to indemnify, defend, and hold ParemTech harmless from any third party claims arising from such.
Product Modification
Modification of ParemTech's products, through the use or misuse of ParemTech products, can lead to malfunction causing risk. You are responsible for any modifications you perform on your or anyone else's products using ParemTech products. ParemTech is not responsible and will not be held liable for any modifications to its products.
Limitation Of Liability
As set forth above under the limited warranty provisions, ParemTech liability is limited to repair or replacement of its products which are returned to it in the specified period of time. In no event shall ParemTech liability exceed the value of the product(s) sold. In no event shall ParemTech be liable for any direct, indirect, punitive, incidental, special or consequential damages whatsoever arising out of or connected with the use or misuse of any of its products.
Inspect Before Each Use
This product must be inspected for use to ensure it has not been damaged in shipment. If damaged, do not use and immediately return the product to ParemTech for a replacement.
Entire Obligation
The PRODUCT LIABILITY DISCLAIMER document states the entire obligation of ParemTech with respect to the products. If any part of this disclaimer is determined to be void, invalid, unenforceable or illegal, including, but not limited to the warranty disclaimers and liability disclaimers and liability limitations set forth above, then the invalid or unenforceable provision will be deemed superseded by a valid, enforceable provision that most closely matches the intent of the original provision and the remainder of the agreement shall remain in full force and effect.
Applicable Law
Your order from ParemTech, and this disclaimer statement are governed by the laws of the province of Ontario, Canada. You hereby consent to the exclusive jurisdiction and venue of the Supreme Court of Canada, in all disputes arising out of or relating to the use of this product. Use of this product is unauthorized in any jurisdiction that does not give effect to all provisions of these terms and conditions, including without limitation this paragraph.
Modification of Terms and Conditions
ParemTech reserves the right to change the terms, conditions, and notices under which its products are offered.

Device Setup and Installation

1 Let's start with powering up the receiver and transmitter to ensure everything is working as it should, before final installation. The device labels indicate if it is a receiver or transmitter.

First, place the receiver anywhere within range of your 2.4Ghz WiFi and a power outlet. Once plugged in, the power LED should be on and the status LED should be blinking three times every few seconds.

Second, remove the lid on the transmitter and insert the provided AA batteries into the transmitter. You should see the status LED blink three times slowly to indicate a successful connection with the receiver.

Screw the lid back down tightly to prevent water leakage.

INFO - The receiver status LED blinks three times every few seconds to indicate that it is not connected to WiFi. The receiver status LED blinks once quickly every couple of minutes to indicate that it is connected and communicating online successfully.

INFO - The transmitter status LED blinks three times once to show that it is connected to the receiver. It will blink twice quickly every second, seven times, to indicate that it can't connect to the receiver, but it tried seven times to do so.

2 Let's get the device connected to your WiFi. You have two options, using our phone apps (Method A), or using the PTDevice directly (Method B).

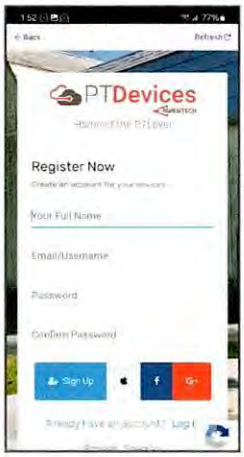
GET IT ON Google Play | Download on the App Store

TIP - Using the phone app is the easiest. However, if you install for other customers, if you have some issues with the app, or you are using a laptop or other device to connect with, the direct connection to the PTDevice is used as an alternative. See Method B.

This is your Device ID. It is used for connecting the device to your WiFi and for adding it to your PTDevices Account. You can also find this ID on the back of the receiver.

Main Tank

Method A: Using the PTDevices phone application.



Install and open the PTDevices phone app.

Select "Create Account" to start up a PTDevices account if you don't have one yet. Log into your account if you have an account already.

Proceed to your account menu and select "Setup Device".

The menu is opened by pressing on the:

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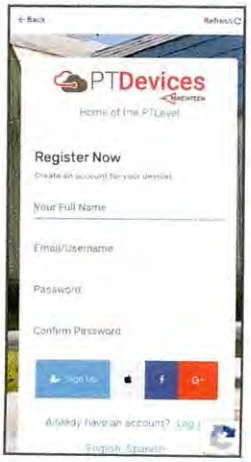
Cottage Tank

Method A: Using the PTDevices phone application.



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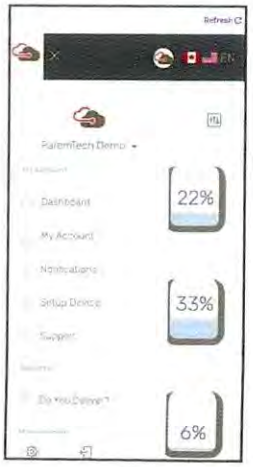


Proceed to your account menu and select "Setup Device".

The menu is opened by pressing on the:

Select "New PTDevice" to start the process of connecting your device to your WiFi.

Work through the next steps. Select "Yes" for the QR code.

Hover your camera over the QR code. If it can read the code, you will be prompted to the next step.

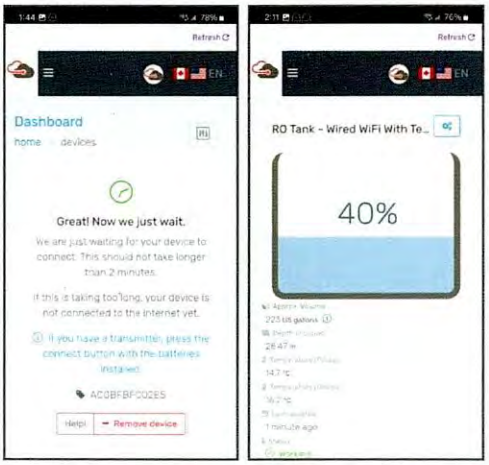
Allow your phone to connect to the device's WiFi if it prompts you.

Select your home/work WiFi and enter in the password correctly.

If the password was entered correctly, you will see the green check mark.

Your device has also been added to your account for you. Simply press the transmitter "Connect" button to see your device show up in your account properly.

Now you can set your settings online and proceed with the next set of instructions for final installation.



Method B: Using the PTDevices built in WiFi connection.

INFO - The main idea is to connect to the PTDevice's WiFi, access it's webserver, and follow the connection steps that it provides.

First, create an account online. This involves going to **www.ptdevices.com**, creating / logging into a free account.

With your free account, you can:

- View device history
- Setup sms and email alerts
- Share with your delivery company
- and more...

We offer a premium level account where you can upgrade to add even more features to your account.

TIP - It really helps to "forget" your home WiFi signal so that your phone/computer stays connected to the PTDevice for the duration of the setup. This happens because the PTDevice does not provide internet, and as soon as you open your browser, your phone/computer will try the last known WiFi to get the internet back.

This is just a guide as every phone, computer, etc., can look different. However, the process is the same.

iPhone

Find the settings icon.

Select WiFi in the following menu.

Connect to the PTLevel WiFi.

Windows

Find the Network icon at the bottom right.

Click on the icon to bring up WiFi list. Select the PTLevel and connect to it.

MacOS

Find the Network icon at the top right and click on it to list the available networks.

Android

Pull down the top menu.

Long press the WiFi Icon to bring up the WiFi list.

IMPORTANT: Select "Details" to get to the following screen.

Once you are connected to the PTLevel WiFi, open your device browser and type **http://192.168.4.1** into the address bar.

You will see the Device Portal.

Select "Connect to a WiFi Network".

TIP - You must use a browser, not a search input.

Once you see a list of surrounding WiFi signals, choose the WiFi signal that will be the strongest at the location of this device's installation and one that provides an internet connection.

The next step will be to enter in the password of the selected WiFi network.

Be sure to enter the password correctly.

You will see the left screen if you've completed the setup correctly.

Now you can connect your phone/tablet/computer back to your normal WiFi network.

Once you are back on the internet, feel free to click on that ID link to start with your PTDevices.com setup. If you've closed the left screen already, no worries.

Now, disconnect from the PTDevice's WiFi, or wait a moment for it to happen automatically. Then connect your phone/computer back to a WiFi with internet and follow the below steps to add the device to your PTDevices account.

Proceed to your PTDevices account menu and select "Setup Device".

The menu is opened by pressing on the:

Enter in the ID found here in the manual or on the back of your receiver. Then click on the "Add my device" button.

Then you'll see a "waiting for device to connect" screen. If you've successfully connected your receiver to the internet, then just press the "Connect" button on the transmitter to see that everything works in your account.

That's it! Now you can follow the other provided instructions related to the type of device you have or see support.paremtech.com for more information.

Troubleshooting

Can't connect or stay connected to the PTLevel WiFi

Some computers, phones, or tablets won't stay connected to the PTLevel WiFi due to the lack of internet from the PTLevel. Your device will switch back to the last known good WiFi as soon as you open a browser. To prevent this from happening, the best way is to "Forget" the "last known" WiFi. This will ensure your device stays connected to the PTLevel WiFi because there are no other options.

What do the receiver status LED blinks mean?

- Always on - This scenario represents an issue with the device. Please contact us to work with you on repairing or replacing.
- Blinks three times every few seconds - This means that your PTLevel is not connected to any WiFi. Please unplug and re-plug in or setup the connection to a WiFi within range.
- Blinks once quickly every once in a while - This is normal function. The Status LED comes on whenever the device reports sensor data.

What do the transmitter status LED blinks mean?

- Three times slowly - Represents a successful connection with the receiver.
- Two quick blinks every 2 seconds 7 times - Represents an unsuccessful connection with the receiver. Either out of range, or it needs to be linked. Please see support.paremtech.com for more information.

Device reads "Not Connected" online

This means that your receiver has malfunctioned or has lost the WiFi signal it was connected to. Check the device for power and see if it can be connected to a WiFi signal within range. This status is for the receiver only.

Device reads "Transmitter Not Reporting" online

This means that your transmitter has malfunctioned or is out of range. We suggest to give it a day longer to see what happens or go press the "Connect" button on it to see what is happening with it.

Device Features to Know About

The device has a built in web server so that you can access the device at any time through your own home network, if you know the IP address. You can find the IP in the Features of your device online. A few features are available to you if you can access the device:

- Disconnect the device from the current WiFi.
- Manage the transmitter that is linked to the receiver.
- Setup a Static IP should you want to.
- Retrieve raw sensor values in JSON format by going to xxx.xxx.xxx.xxx/get_sensors

Moving or changing your router/internet? You can press and hold the "Connect" button, on the front of the receiver, for over 6 seconds in order to disconnect from your WiFi. A single quick press of the same button reboots the device.

Batteries

The PTLevel transmitter is where the batteries reside. It requires 4 AA batteries of any type. Just remove the four screws in the lid, pull off the lid carefully, pop the batteries out carefully, and finally, place the new batteries. You should note what the status LED is doing after the last battery is replaced.

Device Specifications

Connectivity

- 802.11 b/g/n 2.4Ghz WiFi
- Supports 20 and 40 Mhz bandwidth
- 915Mhz LoRa for the long range communication

Receiver Power

- 4V to 10V DC input range with 85mA average power draw
- 110V - 220V 50/60Hz Wall adapter - 5v DC 500mA output

Technical

- -40°C to 85°C temperature range

Dimensions

- Transmitter - 69mm x 140mm x 51mm
- Receiver - 55mm x 95mm x 51mm

Transmitter Power

- 4 AA batteries of any kind
- Expected battery life: greater than one year
- 8uA sleep current

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www.paremtech.com
www.ptdevices.com

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